

ABSTRACT

TITLE: Comparative study of the effects of intravenous palonosetron versus ondansetron and dexamethasone for prevention of postoperative nausea and vomiting (PONV) after laparoscopic cholecystectomy: A prospective randomized control study.

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CONTEXT:

Postoperative nausea and vomiting (PONV) is still a common and distressing problem after anesthesia ever since the inception of modern anesthesia in 1846. The incidence varies between 30 – 50 %. Various patient and surgical factors are identified as risk factors for PONV. Laparoscopic cholecystectomy has one of the highest incidences of PONV. The Apfel score has been recognized as a reliable risk predictor for PONV. In patients with moderate risk a combination therapy (ondansetron with dexamethasone) has been recommended. However there are few concerns about the use of dexamethasone like worsening of glycemic control and impaired wound healing and infection. Palonosetron is a newer 5HT₃ receptor agonist that has a longer duration of action of up to 48 hours and also does not cause QT prolongation; a side effect in the older generation of drugs.

PRIMARY OBJECTIVE:

To compare the efficacy of a single dose palonosetron vs. a combination of ondansetron and dexamethasone for the prevention of postoperative nausea and vomiting after laparoscopic cholecystectomy.

SECONDARY OBJECTIVES:

1. To study the requirement for rescue anti-emetic medications
2. To observe the side effects of the drugs administered, if any.

METHODS:

A prospective randomized controlled trial was conducted in the department of Anaesthesia in the Christian Medical College, Vellore from November 2015 to June 2016. All consenting patients who underwent laparoscopic cholecystectomy were included in the study. They were randomly allotted into one of two anti emetic drug regimens, ondansetron with dexamethasone or palonosetron only. Randomization was computer generated Block Randomization of sizes 2 or 4 or 6. Allocation concealment was by an opaque envelope, which was opened by the anaesthetist on the case after the patient was anaesthetised and the drugs were administered according to the regimen allocated. Postoperative complaints of nausea or vomiting were assessed at 0 to 2 hours, 2 to 6 hours and 6 to 24hours.

RESULTS:

From the 55 patients analyzed the study showed that there was no significant difference in the prevention of PONV between the two groups studied ($p = 0.525$). It was also noted that the dose of intraoperative opioid given did not affect the outcome in both the study groups. There were no adverse effects noted in either group.

CONCLUSION:

The combination of ondansetron and dexamethasone is the commonly used prophylaxis for the prevention of PONV. As the efficacy of palonosetron is comparable to that of the combination of ondansetron and dexamethasone it may be beneficial to use palonosetron as a single dose regimen given during surgery as this drug is known to have a better safety profile and also does not have the unwanted side effects of using dexamethasone.

KEYWORDS: Postoperative nausea, vomiting, ondansetron, dexamethasone, palonosetron.